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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,475	03/30/2004	Hiroshi Suzuki	16869N-111600US	7769
20350 7590 06/19/2007 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			EXAMINER DILLON, SAMUEL A	
			ART UNIT 2185	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/814,475

Applicant(s)

SUZUKI ET AL.

Examiner

Sam Dillon

Art Unit

2185

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/30/04 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 2185

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. The Examiner acknowledges the applicant's submission of the amendment dated May 17, 2007. Per the amendment, Claims 4, 14 and 16-20 have been cancelled and Claims 1-3, 5-13 and 15 have been amended.

2. The instant application having Application No. 10/814,475 has a total of 13 claims pending in the application; there are 5 independent claims and 8 dependent claims, all of which are ready for examination by the examiner.

I. RESPONSE TO AMENDMENT(S) / ARGUMENT(S)

3. Applicant's arguments with respect to the 35 U.S.C. 103(a) rejections of Claims 1-3, 5-13 and 15 have been fully considered and are **persuasive**, but are moot in view of the new ground(s) of rejection, as described below.

II. REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC ' 103 – Hubis and Bhanot

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2185

5. **Claims 1-3, 5-7, 9-12 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubis et al (*US Patent Number 6,343,324*) in view of Bhanot et al. (*US Patent Number 5,796,934*).

6. As per **Claim 1**, Hubis discloses an input/output management system for managing input or output from or to a disk device (*Hubis, disk drive storage array, column 3 lines 62-65*) connected to an operating computer (*host 1, Figure 2A*), comprising:

a connection information definition block (*NURAM 182, Figure 2A*) in which the relationship of logical connection (*port mapping table entry 190, Figure 2B-3*) between said operating computer and a logical volume (*logical volume, column 10 line 33*) included in said disk device or a logical area (*logical volume, column 10 line 33*) in a logical volume (*physical disc drive, column 10 line 32*) is defined using computer identification information included in a computer identification information definition division (*unique identifier, column 4 line 5*); and

an input/output execution control block (*processor 180, Figure 2A*) that controls, based on the computer identification information, whether said operating computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 4 lines 6-8*).

Hubis does not disclose that wherein said connection information definition block includes computer succession information for associating said operating computer with a successor computer that is connected to said disk device; and wherein in the event that said operating computer is enabled by the computer identification information and a failure of said operating computer is identified, the computer identification information is rewritten according to the computer succession information such that said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume.

Art Unit: 2185

Bhanot discloses

associating an operating computer (*primary server, column 2 lines 39-41*) with a successor computer (*backup server, column 2 lines 39-41*) that is connected to a disk device (*client system, column 2 lines 38-39*);

wherein in the event that a failure of said operating computer is identified (*column 2 lines 46-47*), said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 2 lines 46-61*).

Hubis and Bhanot are analogous art in that they both deal with synchronizing multiple computer connections. At the time of the invention it would have been obvious to modify Hubis' to store information so that when the host failed another host could connect to the logical volume. In the context of Hubis this is most obviously accomplished by modifying the port mapping table to store the additional piece of information of a backup computer to switch to in case of a failure of the computer. Accordingly, when the failure occurs the table is updated with the current connection information (*i.e. the computer identification information is rewritten according to the computer succession information*).

The motivation for doing so would at least have been that host failures are transparent, the modification is relatively inexpensive and it is capable of being retrofitted into many systems (*Bhanot, column 2 lines 32-35 and lines 59-61*). Therefore, it would have been obvious to modify Hubis to have a backup computer delineated as taught by Bhanot for the purpose of transparent host failures, to obtain the invention of Claim 1.

7. As per Claim 2, Hubis discloses an input/output management system for managing input or output from or to a disk device (*disk drive storage array, column 3 lines 62-65*) connected to a plurality of computers (*plurality of computers, column 4 line 3 and host 1 through M, Figure 2A*), comprising:

Art Unit: 2185

a connection information definition block (*NURAM 182, Figure 2A*) in which the relationship of logical connection (*port mapping table 190, Figure 2A*) between each of said computers and a logical volume (*storage volume 108, column 4 line 48 and logical volume 1, Figure 2A*) included in said disk device or a logical area (*logical volume, column 10 line 33*) in a logical volume (*physical disc drive, column 10 line 32*) is defined using computer identification information (*unique identifier, column 4 line 5*); and

an input/output execution control block (*processor 180, Figure 2A*) that controls, based on the computer identification information, whether each of said computers is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 4 lines 6-8*).

Hubis does not disclose that wherein said connection information definition block includes computer succession information for associating said operating computer with a successor computer that is connected to said disk device; and wherein in the event that said operating computer is enabled by the computer identification information and a failure of said operating computer is identified, the computer identification information is rewritten according to the computer succession information such that said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume.

Bhanot discloses

associating an operating computer (*primary server, column 2 lines 39-41*) with a successor computer (*backup server, column 2 lines 39-41*) that is connected to a disk device (*client system, column 2 lines 38-39*);

wherein in the event that a failure of said operating computer is identified (*column 2 lines 46-47*), said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 2 lines 46-61*).

Hubis and Bhanot are analogous art in that they both deal with synchronizing multiple computer connections. At the time of the invention it would have been obvious to modify Hubis' to store information so that when the host failed another host could connect to the logical volume. In the context of Hubis this is most obviously accomplished by modifying the port mapping table to store the additional piece of information of a backup computer to switch to in case of a failure of the computer. Accordingly, when the failure occurs the table is updated with the current connection information (*i.e. the computer identification information is rewritten according to the computer succession information*).

The motivation for doing so would at least have been that host failures are transparent, the modification is relatively inexpensive and it is capable of being retrofitted into many systems (*Bhanot, column 2 lines 32-35 and lines 59-61*). Therefore, it would have been obvious to modify Hubis to have a backup computer delineated as taught by Bhanot for the purpose of transparent host failures, to obtain the invention of Claim 2.

8. As per Claim 3, Hubis, McIlroy and Feiertag disclose an input/output management system according to Claim 1, wherein

Said computer identification information definition division (*host computer ID map data structure, column 4 lines 10-11*) defines in which physical identification information (*host computer ID, column 4 line 10*) that uniquely indicates said operating computer connected to said disk device.

9. As per Claim 5, Hubis, McIlroy and Feiertag disclose an input/output management system according to Claim 2, wherein

said input/output execution control block controls whether said each of said computers can access a logical area in a logical volume included in said disk device (*Hubis, column 4 lines 6-8*).

Art Unit: 2185

10. As per **Claim 6**, Hubis, McIlroy and Feiertag disclose an input/output management system according to Claim 1, wherein

said computer identification information (*in the port mapping table 190, Figure 2B-3*) defines the relationship of logical connection (*port mapping table entry 191, Figure 2B-3*) between said operating computer and a logical volume included in said disk device using port numbers (*i/o processor number column in port mapping table, Figure 2B-3*) assigned to the ports of said disk device connected to said operating computer (*port 114-1 through port 114-M in Figure 2A*).

11. As per **Claim 7**, Hubis and Bhanot disclose an input/output management system according to Claim 1,

wherein the computer identification information (*Hubis, in the port mapping table 190, Figure 2B-3*) is used to control whether each of a plurality application programs (*Hubis, inherently implied by Microsoft Windows NT, UNIX or Novel, column 2 lines 4-13*) running in said operating computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*Hubis, column 4 lines 6-8*).

12. As per **Claim 9**, Hubis discloses an input/output management method for managing input or output from or to a disk device (*disk drive storage array, column 3 lines 62-65*) connected to an operating computer (*host 1, Figure 2A*), the method comprising:

defining the relationship of logical connection (*NURAM data structures 182, Figure 2A*) between said operating computer and a logical volume (*logical volume, column 10 line 33*) included in said disk device or a logical area (*logical volume, column 10 line 33*) in a logical volume (*physical disc drive, column 10 line 32*), wherein the relationship is defined using computer identification information (*unique identifier, column 4 line 5*); and

Art Unit: 2185

controlling, based on the computer identification information, whether said operating computer is enabled to access a logical volume included in said disk device or a logical area a logical volume (*col. 4 lines 6-8*).

Hubis does not disclose associating said operating computer with a successor computer using computer succession information, wherein the successor computer is connected to said disk device; and wherein in the event that said operating computer is enabled by the computer identification information and a failure of said operating computer is identified, the computer identification information is rewritten according to the computer succession information such that said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume.

Bhanot discloses

associating an operating computer (*primary server, column 2 lines 39-41*) with a successor computer (*backup server, column 2 lines 39-41*) that is connected to a disk device (*client system, column 2 lines 38-39*);

wherein in the event that a failure of said operating computer is identified (*column 2 lines 46-47*), said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 2 lines 46-61*).

Hubis and Bhanot are analogous art in that they both deal with synchronizing multiple computer connections. At the time of the invention it would have been obvious to modify Hubis' to store information so that when the host failed another host could connect to the logical volume. In the context of Hubis this is most obviously accomplished by modifying the port mapping table to store the additional piece of information of a backup computer to switch to in case of a failure of the computer. Accordingly, when the failure occurs the table is updated with

Art Unit: 2185

the current connection information (*i.e. the computer identification information is rewritten according to the computer succession information*).

The motivation for doing so would at least have been that host failures are transparent, the modification is relatively inexpensive and it is capable of being retrofitted into many systems (*Bhanot, column 2 lines 32-35 and lines 59-61*). Therefore, it would have been obvious to modify Hubis to have a backup computer delineated as taught by Bhanot for the purpose of transparent host failures, to obtain the invention of Claim 9.

13. As per Claim 10, Hubis and Bhanot disclose an input/output management method according to Claim 9, wherein

the computer identification information contains physical identification information (*Hubis, host world wide name list 153, Figure 2B-1*) that uniquely indicates said computer connected to said disk device.

14. As per Claim 11, Hubis discloses an input/output management method for managing input or output from or to a disk device (*disk drive storage array, column 3 lines 62-65*) connected to an operating computer (*host 1, Figure 2A*), the method comprising:

defining, based on computer identification information (*host world wide name list 153, Figure 2B-1*) and logical volume connection information (*volume permission table 194, Figure 2B-3*), the relationship of logical connection (*port mapping table 190, Figure 2B-3*) between said operating computer and a logical volume (*logical volume, column 10 line 33*) included in said disk device or a logical area (*logical volume, column 10 line 33*) in a logical volume (*physical disc drive, column 10 line 32*); and

controlling, based on the computer identification information and the logical volume connection information, whether said operating computer is enabled to access a logical area in a logical volume included in said disk device (*column 4 lines 6-8*).

Hubis does not disclose associating said operating computer with a successor computer using computer succession information, wherein the successor computer is connected to said disk device; and wherein in the event that said operating computer is enabled by the computer identification information and a failure of said operating computer is identified, the computer identification information is rewritten according to the computer succession information such that said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume.

Bhanot discloses

associating an operating computer (*primary server, column 2 lines 39-41*) with a successor computer (*backup server, column 2 lines 39-41*) that is connected to a disk device (*client system, column 2 lines 38-39*);

wherein in the event that a failure of said operating computer is identified (*column 2 lines 46-47*), said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 2 lines 46-61*).

Hubis and Bhanot are analogous art in that they both deal with synchronizing multiple computer connections. At the time of the invention it would have been obvious to modify Hubis' to store information so that when the host failed another host could connect to the logical volume. In the context of Hubis this is most obviously accomplished by modifying the port mapping table to store the additional piece of information of a backup computer to switch to in case of a failure of the computer. Accordingly, when the failure occurs the table is updated with the current connection information (*i.e. the computer identification information is rewritten according to the computer succession information*).

The motivation for doing so would at least have been that host failures are transparent, the modification is relatively inexpensive and it is capable of being retrofitted into many systems

Art Unit: 2185

(*Bhanot, column 2 lines 32-35 and lines 59-61*). Therefore, it would have been obvious to modify Hubis to have a backup computer delineated as taught by Bhanot for the purpose of transparent host failures, to obtain the invention of Claim 11.

15. As per Claim 12, Hubis and Bhanot disclose an input/output management method according to Claim 9, further comprising

controlling whether each of a plurality of application programs (*Hubis, inherently implied by Microsoft Windows NT, UNIX or Novel, column 2 lines 4-13*) running in said operating computer can access a logical volume included in said disk device or a logical area in a logical volume is controlled (*Hubis, column 4 lines 6-8*).

16. As per Claim 15, Hubis discloses a computer-readable storage medium including a disk control program for executing a method of processing information based on which input or output from or to a disk device (*disk drive storage array, column 3 lines 62-65*) connected to an operating computer (*host 1, Figure 2A*) is managed, wherein said disk control program comprises:

code for defining the relationship of logical connection (*NURAM data structures 182, Figure 2A*) between said operating computer and a logical volume (*logical volume, column 10 line 33*) included in said disk device or a logical area (*logical volume, column 10 line 33*) in a logical volume (*physical disc drive, column 10 line 32*) on the basis of both physical identification information (*host world wide name list 153, Figure 2B-1*) that uniquely indicates said operating computer connected to said disk device, and logical volume connection information (*permission column 195, Figure 2B-3*) that contains a connected state value (*permission value 195, Figure 2B-3*) concerning the connection of said operating computer to each logical volume included in said disk device or each logical area in each logical volume; and

code for controlling, based on the physical identification information and the logical volume connection information, whether said operating computer is enabled to access a logical volume included in said disk device or a logical area a logical volume (*column 4 lines 6-8*).

Hubis does not disclose associating said operating computer with a successor computer using computer succession information, wherein the successor computer is connected to said disk device; and wherein in the event that said operating computer is enabled by the computer identification information and a failure of said operating computer is identified, the computer identification information is rewritten according to the computer succession information such that said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume.

Bhanot discloses

associating an operating computer (*primary server, column 2 lines 39-41*) with a successor computer (*backup server, column 2 lines 39-41*) that is connected to a disk device (*client system, column 2 lines 38-39*);

wherein in the event that a failure of said operating computer is identified (*column 2 lines 46-47*), said successor computer is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*column 2 lines 46-61*).

Hubis and Bhanot are analogous art in that they both deal with synchronizing multiple computer connections. At the time of the invention it would have been obvious to modify Hubis' to store information so that when the host failed another host could connect to the logical volume. In the context of Hubis this is most obviously accomplished by modifying the port mapping table to store the additional piece of information of a backup computer to switch to in case of a failure of the computer. Accordingly, when the failure occurs the table is updated with

Art Unit: 2185

the current connection information (*i.e. the computer identification information is rewritten according to the computer succession information*).

The motivation for doing so would at least have been that host failures are transparent, the modification is relatively inexpensive and it is capable of being retrofitted into many systems (*Bhanot, column 2 lines 32-35 and lines 59-61*). Therefore, it would have been obvious to modify Hubis to have a backup computer delineated as taught by Bhanot for the purpose of transparent host failures, to obtain the invention of Claim 11.

Claim Rejections - 35 USC ' 103 – Hubis, Bhanot and Tang

17. **Claims 8 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubis et al (*US Patent Number 6,343,324*) and Bhanot et al. (*US Patent Number 5,796,934*) as applied to Claim 11 above, in further view of Tang et al ("*Load Distribution via Static Scheduling and Client Redirection for Replicated Web Servers*").

18. As per **Claim 13**, Hubis and Bhanot disclose an input/output management method according to Claim 11, wherein a plurality of pieces of definition information (*Hubis, port mapping table entry 191, Figure 2B-3*) define whether said computer or each of a plurality of application programs running in said computer can access a logical volume included in said disk device or a logical area in a logical volume (*Hubis, column 4 lines 6-8*). Hubis and McIlroy do not disclose the plurality as being automatically switched with the start of each of time zones according to a predefined schedule.

The limitation "*said computer or each of a plurality of application programs running in said computer*" can be fulfilled by one or more of the limitations "*said computer*" or "*each of a plurality of application programs running in said computer*".

Art Unit: 2185

Tang discloses a plurality of pieces of definition information as being automatically switched (*section 2 item 2 lines 3-5*) with the start of each of time zones (*period of T_s , section 2 item 2 line 3*) according to a predefined schedule (*section 2 item 2*).

Hubis, Bhanot and Tang are analogous art in that they deal with managing the connection relationship between clients accessing data from one of a plurality of storage locations. It would have been obvious to someone with ordinary skill in the art to schedule connections in Hubis and Bhanot's storage system with Tang's scheduler.

Tang discloses that using a scheduler allows user-specific data to be migrated or located at a specific storage location (*section 1 paragraph 3 lines 11-13*) while still keeping the load on each storage location balanced (*section 1 paragraph 3 lines 13-14*).

Therefore, it would have been obvious to combine the storage system taught by Hubis and Bhanot with the scheduler taught by Tang for the benefit of minimizing data replication and balancing the load on each storage location, to obtain the invention as specified in Claim 13.

19. As per Claim 8, Hubis and Bhanot disclose an input/output management system according to Claim 7, further comprising

a schedule definition division in which a plurality of pieces of computer identification information (*Hubis, port mapping table entry 191, Figure 2B-3 and Tang, hostname/IP address, section 2.1 line 3*) defining whether said operating computer or each of said application programs (*Hubis, inherently implied by Microsoft Windows NT, UNIX or Novel, column 2 lines 4-13*) is enabled to access a logical volume included in said disk device or a logical area in a logical volume (*Hubis, col. 4 lines 6-8*) is specified in relation to respective time zones (*Tang, period of T_s , section 2 item 2 line 3*), and in which a schedule for automatically changing the plurality of pieces of computer identification information is predefined (*Tang, section 2 item 2*).

Regarding the limitation "*a schedule definition division*", Tang discloses a scheduler generating and storing assignments between client networks and assigned servers (*section 2.2 lines 1-2*). Although not expressly mentioned, it is inherent in the storing operation for the scheduler to store the assignments in an accessible way in memory. Assignments stored in an accessible way in memory can be considered a data structure, and this data structure subsequently fulfils the limitation of a schedule definition division.

III. CLOSING COMMENTS

a. STATUS OF CLAIMS IN THE APPLICATION

20. The following is a summary of the treatment and status of all claims in the application as recommended by M.P.E.P. '707.07(i):

a(1). CLAIMS REJECTED IN THE APPLICATION

21. Per the instant office action, Claims 1-3, 5-13 and 15 have received an action on the merits and are subject of a non-final action.

b. DIRECTION OF FUTURE CORRESPONDENCES

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Dillon whose telephone number is 571-272-8010. The examiner can normally be reached on 9:30-6:00.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on 571-272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2185

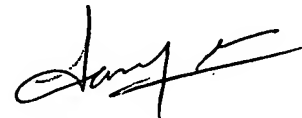
IMPORTANT NOTE

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SAD

Sam Dillon
Examiner
Art Unit 2185



SANJIV SHAH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100